

IN THE CLAIMS

The following list, if entered, replaces all prior versions of the claims.

1. **(Currently Amended)** A method comprising:
detecting a failure of a first link, wherein
 said first link is coupled between a first port of a network element and an upstream portion of a communications network,
 said first link comprises a first part of a communications channel between said upstream portion of said communications network and a downstream portion of said communications network, and
 said first port is associated with a virtual network[[,]];
in response to said detecting said failure of said first link,
 identifying a second port of said network element that is associated with said virtual network, wherein
 a second link is coupled between said second port of said network element and said downstream portion of said communications network, and
 said second link comprises a second part of said communications channel, and
 disabling said second port of said network element;
in response to detecting a recovery of said first link, re-enabling said second port of said network element; and
in response to said re-enabling said second port, said communications channel failing back to said first link and said second link.
2. (Original) The method of claim 1, wherein
 said downstream portion of said communications network comprises a redundantly-linked network element.
3. (Original) The method of claim 2, wherein
 said redundantly-linked network element comprises a protocol stack including a first protocol stack layer and a second protocol stack layer,
 said first protocol stack layer is associated with one or more applications, and

said disabling comprises notifying said second protocol stack layer of said failure.

4. (Original) The method of claim 3, wherein
said network element comprises a primary network element,
said method further comprises enabling a third link between said redundantly-linked
network element and a secondary network element, and
said secondary network element is coupled to said upstream portion of said
communications network using a fourth link.

5. (Original) The method of claim 2, wherein said redundantly-linked network element
comprises a multi-homed endstation.

6. (Original) The method of claim 2, wherein said network element comprises a datalink
layer network element.

7. (Previously Presented) The method of claim 1, wherein
said second port is not re-enabled, if said second port is configured to remain disabled in
response to said detecting said recovery of said first link.

8. (Original) The method of claim 2, wherein said upstream portion of said
communications network comprises a network layer network element.

9. (Previously Presented) The method of claim 1, wherein said disabling said second port
further comprises:

disabling a plurality of links between said network element and a plurality of
redundantly-linked network elements, wherein said downstream portion of said
communications network comprises said plurality of redundantly-linked network
elements.

10. (Previously Presented) The method of claim 1, wherein said disabling said second port
further comprises:

disabling a link of a plurality of links between said network element and a plurality of
redundantly-linked network elements, wherein said downstream portion of said
communications network comprises said plurality of redundantly-linked network
elements.

11.-12. (Cancelled)

13. (Previously Presented) The method of claim 1, wherein said disabling said second port further comprises:

disabling said second port of said network element within a period of time substantially less than or equal to 50 milliseconds of said detecting said failure of said first link.

14. (Previously Presented) The method of claim 1, wherein said disabling said second port further comprises:

disabling said second port of said network element within a period of time substantially less than or equal to 2 seconds of said detecting said failure of said first link.

15. (Previously Presented) A network element comprising:

a processor; and

a memory coupled to said processor, said memory storing instructions executable by said processor to implement:

a link failure propagation module, configured to:

detect a failure of a first link, wherein

said first link is coupled between a first port of said network element and an upstream portion of a communications network,

said first link comprises a first part of a communications channel between said upstream portion of said communications network and a downstream portion of said communications network, and

said first port is associated with a virtual network;

in response to said detection of said failure of said first link,

identify a second port of said network element that is associated

with said virtual network, wherein

a second link is coupled between said second port of said network element and said downstream portion of said communications network, and

said second link comprises a second part of said
 communications channel, and
 disable said second port of said network element;
 re-enable said second port of said network element, in response to a
 detection of a recovery of said first link; and
 cause said communications channel to fail back to said first link and said
 second link, in response to said re-enabling said second port.

16. (Previously Presented) The network element of claim 15, wherein
 said downstream portion of said communications network comprises a redundantly-linked network element.
17. (Previously Presented) The network element of claim 16, wherein
 said redundantly-linked network element comprises a protocol stack including a first
 protocol stack layer and a second protocol stack layer,
 said first protocol stack layer is associated with one or more applications, and
 said link failure propagation module is further configured to notify said second protocol
 stack layer of said failure.
18. (Previously Presented) The network element of claim 16, wherein
 said network element comprises a primary network element,
 said redundantly-linked network element is configured to enable a third link between said
 redundantly-linked network element and a secondary network element, and
 said secondary network element is coupled to said upstream portion of said
 communications network using a fourth link.
19. (Previously Presented) The network element of claim 16, wherein said redundantly-linked network element comprises a multi-homed endstation.
20. (Previously Presented) The network element of claim 15, wherein said link failure propagation module is further configured to
 disable a link of a plurality of links between said network element and a plurality of
 redundantly-linked network elements, wherein said downstream portion of said

communications network comprises said plurality of redundantly-linked network elements.

21.-22. (Cancelled)

23. (Previously Presented) The network element of claim 15, wherein said link failure propagation module is further configured to
 disable said second port of said network element within a period of time substantially less than or equal to 50 milliseconds of said detecting said failure of said first link.

24. (Previously Presented) The network element of claim 15, wherein said link failure propagation module is further configured to
 disable said second port of said network element within a period of time substantially less than or equal to 2 seconds of said detecting said failure of said first link.

25. (Currently Amended) A machine-readable non-transitory storage medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to perform a method comprising:

 detecting a failure of a first link, wherein
 said first link is coupled between a first port of a network element and an upstream portion of a communications network,
 said first link comprises a first part of a communications channel between said upstream portion of said communications network and a downstream portion of said communications network, and
 said first port is associated with a virtual network;
 in response to said detecting said failure of said first link,
 identifying a second port of said network element that is associated with said virtual network, wherein
 a second link is coupled between said second port of said network element and said downstream portion of said communications network, and
 said second link comprises a second part of said communications channel,
 and
 disabling said second port of said network element; [[and]]

in response to detecting a recovery of said first link, re-enabling said second port of said network element; and

in response to said re-enabling said second port, said communications channel failing back to said first link and said second link.

26. (Previously Presented) The machine-readable non-transitory storage medium of claim 25, wherein

 said downstream portion of said communications network comprises a redundantly-linked network element.

27. (Previously Presented) The machine-readable non-transitory storage medium of claim 26, wherein

 said redundantly-linked network element comprises a protocol stack including a first protocol stack layer and a second protocol stack layer,

 said first protocol stack layer is associated with one or more applications, and

 said disabling comprises notifying said second protocol stack layer of said failure.

28. (Previously Presented) The machine-readable non-transitory storage medium of claim 27, wherein

 said network element comprises a primary network element,

 said method further comprises enabling a third link between said redundantly-linked network element and a secondary network element, and

 said secondary network element is coupled to said upstream portion of said communications network using a fourth link.

29. (Previously Presented) The machine-readable non-transitory storage medium of claim 26, wherein said redundantly-linked network element comprises a multi-homed endstation.

30. (Previously Presented) The machine-readable non-transitory storage medium of claim 25, wherein said disabling said second port further comprises:

 disabling a link of a plurality of links between said network element and a plurality of redundantly-linked network elements, wherein said downstream portion of said communications network comprises said plurality of redundantly-linked network elements.

31.-32. (Cancelled)

33. (Previously Presented) The machine-readable non-transitory storage medium of claim 25, wherein said disabling said second port further comprises:

disabling said second port of said network element within a period of time substantially less than or equal to 50 milliseconds of said detecting said failure of said first link.

34. (Previously Presented) The machine-readable non-transitory storage medium of claim 25, wherein said disabling said second port further comprises:

disabling said second port of said network element within a period of time substantially less than or equal to 2 seconds of said detecting said failure of said first link.

35. (Previously Presented) A data processing system comprising:

a redundantly-linked endstation; and

a network element configured to

detect a failure of a first link, wherein

said first link is coupled between a first port of said network element and

an upstream portion of a communications network,

said first link comprises a first part of a communications channel between

said upstream portion of said communications network and said

redundantly-linked endstation, and

said first port is associated with a virtual network,

in response to detection of said failure of said first link,

identify a second port of said network element that is associated with said

virtual network, wherein

a second link is coupled between said second port of said network

element and said redundantly-linked endstation, and

said second link comprises a second part of said communications

channel, and

disable said second port of said network element,

in response to detection of a recovery of said first link, re-enable said second port of said network element, and

- in response to re-enabled said second port, fail back said communications channel to said first link and said second link.
36. (Original) The data processing system of claim 35, wherein
said network element comprises a primary network element,
said redundantly-linked endstation is configured to enable a third link between said
redundantly-linked endstation and a secondary network element, and
said secondary network element is coupled to said upstream portion of said
communications network using a fourth link.
37. (Original) The data processing system of claim 35, wherein
said network element comprises an Ethernet switch.
38. (**Currently Amended**) A data processing system comprising:
a primary network element, wherein
a first port of said primary network element is coupled to an upstream portion of a
communications network using a first link,
a second port of said primary network element is coupled to a redundantly-linked
endstation using a second link,
said first link comprises a first part of a communications channel between said
upstream portion of said communications network and said redundantly-
linked endstation,
said second link comprises a second part of said communications channel,
said first port is associated with a virtual network, and
said primary network element is configured to
detect a failure of said first link,
in response to detection of said failure of said first link,
identify said second port of said primary network element that is
associated with said virtual network, and
disable said second port of said primary network element, and
re-enable said second port of said primary network element coupled to
said second link in response to detection of a recovery of said first
link; and

said redundantly-linked endstation, wherein

 said redundantly-linked endstation is configured to fail back to said

 communications channel comprising said second link in response to re-enabled said second port, and

 said primary network element is configured to fail back to said communications channel comprising said first link, in response to re-enabled said second port.

39. (Previously Presented) The data processing system of claim 38 further comprising:
a secondary network element, wherein
 said secondary network element is coupled to said redundantly-linked endstation using a third link,
 said redundantly-linked endstation is configured to enable said third link, in response to disabled said second port,
 said secondary network element is coupled to said upstream portion of said communications network using a fourth link, and
 said redundantly-linked endstation is configured to fail over to another communications channel comprising said third link and said fourth link, in response to disabled said second port.
40. (Original) The data processing system of claim 38, wherein
 said primary network element comprises an Ethernet switch.
41. (Previously Presented) The method of claim 1, wherein said second link is predetermined, using a configuration interface, to be automatically disabled in response to said detecting said failure of said first link.
42. (Previously Presented) The network element of claim 15, wherein said second link is predetermined, using a configuration interface, to be automatically disabled in response to said detecting said failure of said first link.

43. (Previously Presented) The machine-readable non-transitory storage medium of claim 25, wherein said second link is predetermined, using a configuration interface, to be automatically disabled in response to said detecting said failure of said first link.

44. (Previously Presented) The data processing system of claim 35, wherein said second link is predetermined, using a configuration interface, to be automatically disabled in response to said detecting said failure of said first link.

45. (Previously Presented) The data processing system of claim 38, wherein said second link is predetermined, using a configuration interface, to be automatically disabled in response to said detecting said failure of said first link.

46.-50. (Cancelled)

51. (Previously Presented) The method of claim 1, wherein said disabling said second port further comprises:

determining, on-demand upon said detecting said failure of said first link, that said second port should be disabled, in response to analyzing a plurality of system attributes.

52. (Previously Presented) The network element of claim 15, wherein said link failure propagation module is further configured to

determine, on-demand upon said detection of said failure of said first link, that said second port should be disabled, in response to analyzing a plurality of system attributes.

53. (Previously Presented) The machine-readable non-transitory storage medium of claim 25, wherein said disabling said second port further comprises:

determining, on-demand upon said detecting said failure of said first link, that said second port should be disabled, in response to analyzing a plurality of system attributes.

54. (Previously Presented) The data processing system of claim 35, wherein said network element is further configured to:

determine, on-demand upon said detection of said failure of said first link, that said second port should be disabled, in response to an analysis of a plurality of system attributes.

55. (Previously Presented) The data processing system of claim 38, wherein said primary network element is further configured to:

determine, on-demand upon detection of said failure of said first link, that the second port should be disabled, in response to an analysis of a plurality of system attributes.

56. (Previously Presented) The method of claim 2, further comprising:
said redundantly-linked network element failing back to said second link when said first link and said second link become operational again.

57. (Previously Presented) The network element of claim 16, wherein said link failure propagation module is further configured to fail back said redundantly-linked network element to said second link when said first link and said second link become operational again.

58. (Previously Presented) The machine-readable storage medium of claim 26, wherein said method further comprises:

said redundantly-linked network element failing back to said second link when said first link and said second link become operational again.

59. (Previously Presented) The data processing system of claim 35, wherein said redundantly-linked endstation is configured to fail back to said second link when said first link and said second link become operational again.

60. (Previously Presented) The data processing system of claim 38, wherein said redundantly-linked endstation is configured to fail back to said second link when said first link and said second link become operational again.

61. (Previously Presented) The method of claim 1, wherein
said detecting said failure of said first link further comprises
detecting a bandwidth of the first link falling below a predetermined threshold.
62. (Previously Presented) The network element of claim 15, wherein
said link failure propagation module is further configured to detect a bandwidth of the
first link falling below a predetermined threshold.
63. (Previously Presented) The machine-readable non-transitory storage medium of claim
25, wherein
said detecting said failure of said first link further comprises
detecting a bandwidth of the first link falling below a predetermined threshold.
64. (Previously Presented) The data processing system of claim 35, wherein
said network element is further configured to
detect a bandwidth of the first link falling below a predetermined threshold as
detection of said failure of said first link.
65. (Previously Presented) The data processing system of claim 38, wherein
said primary network element is further configured to
detect a bandwidth of the first link falling below a predetermined threshold as
detection of said failure of said first link.
66. (Previously Presented) The method of claim 1, wherein
said second port of said network element is directly connected to said second link
between said network element and said downstream portion of said
communications network.